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Vol. V SEPTEMBER, 1940 No. 9

The American Horologist

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THE AMERICAN HOROLOGIST

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Every store should have a duct collecting outfit. First, because it is unhealthy to breathe in particles of filings and rouge. Second, because it is wasteful extravagance not to collect the gold dust during either grinding or polishing operations, and which, when sent to a refinery should more than pay for the cost of the outfit in a few months; and last, because the neatness and cleanliness created by this outfit is alone worth more than its cost. You owe it to your store, your shop, and your clothes to keep that dust properly concentrated in a collection bag.

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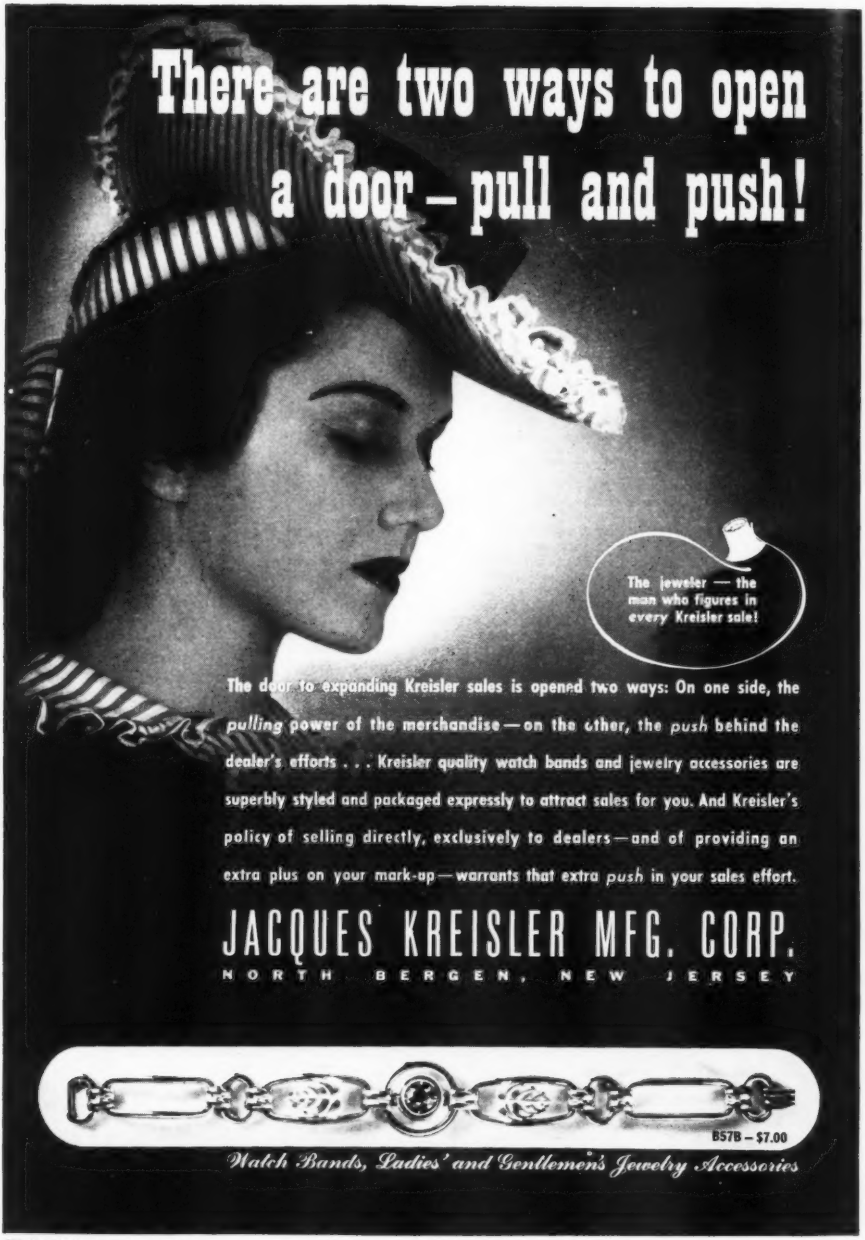
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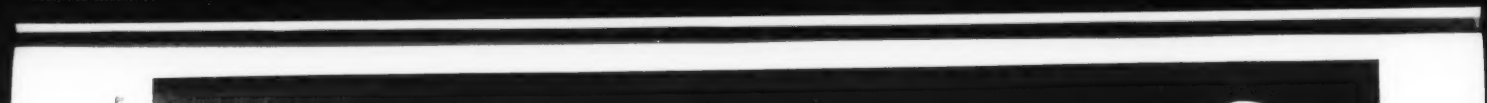

National Group Educational Program

For six years our groups have demanded a planned educational program for the watchmaker. We hesitated, feeling elementary work would be boresome, but through our experience in conducting aeronautical service we know this course and its practical application will meet everyone's approval.

The program was ready last January, but was held up on account of our Schools Accrediting Committee and Curriculum Committee. Now that a national Schools Curriculum has been adopted we built the program to fit it, and to the approval of the Technical Board.

For those guilds and states who have demanded this program, we promise you more than an educational program. We are ready to place in your hands one of the greatest programs of education and organization control that you ever dreamed of—yes, a complete program and all its workings. It will—we are sure—surpass your fondest expectations and solve many of your problems; strengthen your groups and help generally.

No groups have ever offered such a program. Some have talked of it and planned to spend fabulous sums, but we are delivering the goods and penalizing no branch of industry.

For full information send for "National Group Educational Program" which outlines the plan in detail. It will surprise you as it has others who said it couldn't be done.

Just glance over the course and see what you think, but the program, that is tops.

A Practical Course of Instruction in the Science of Horology; or the Construction and Repair of Time Measuring Instruments

ORDER OF LESSONS AND TABLE OF CONTENTS

Section 1—Basic Mechanics

LESSON 1—Selection and use of files and saws: Acquiring skill in the use of tools; filing a square; filing a cylinder; making iron grinding slips; making bell-metal polishing slips; taper filing; sawing metal; making a pair of pierced clock hands; coloring clock hands.

LESSON 2—Making flat steel parts: Properties of steel; making a setting spring; hardening steel; tempering steel; stoning flat steel parts; grinding flat steel parts; polishing flat steel parts.

LESSON 3—Making flat steel parts, turning tools, and burnishers: Making a setting lever spring; making a setting lever; making clutch lever spring; shaping and sharpening turning tools; making burnishers.

LESSON 4—Turning steel: The lathe and its care; the millimeter gauge; turning, grinding, and polishing cylindrical pivots; turning, grinding, and polishing coned pivots; making a set of taps; making a set of drills; making small screws; grinding and polishing screw heads; coloring screws.

LESSON 5—Turning steel parts: Making a barrel arbor, measurements from sample; making an American style winding arbor, for open face watch; making an American style winding arbor, for HTG case watch; making a Swiss style winding arbor; making balance staffs of brass, three sizes; making a steel balance staff, measurements from sample; turning a pinion, from sample; fitting a train wheel on pinion; making a pallet arbor.

LESSON 6—Jeweling: Burnishing in plate and bridge jewels; making balance hole-jewel setting; setting jewel, and fitting setting to recess in balance bridge; making cap-jewel setting, setting jewel, and fitting setting to recess in balance bridge; countersinking cap-jewel setting for jewel-screw heads; cutting recess and fitting balance hole and plate hole-jewels by burnishing in place; cutting recess and fitting set balance hole and cap-jewels in sample brass plate, drilling and tapping jewel-screw holes and countersinking for screw heads; fitting set friction jewels in sample brass plate; fitting unset friction jewels in old settings and sample brass plate.

Section 2—Clock Repairing

LESSON 7—Simple pendulum clock: One-day clock movement with recoil escapement; the mainspring, ratchet, and click; the train, wheels and pinions; the dial train; principles of the recoil escapement; disassembling and examining the movement for repairs; cleaning the movement; assembling the movement and adjusting the escapement; putting the movement on beat; regulating the movement, theory of pendulum vibrations.

LESSON 8—Dead-beat and other escapements: Dead-beat escapement, eight-day regulator clock, weight driven, and with compensated pendulum; drawing a diagram of a dead-beat escapement; half-dead escapement, eight-day clock; Brocot (French visible) escapement; 400-day clock escapement.

LESSON 9—Spring-balance clocks, and striking clocks: Alarm mechanism of desk clock; pin-pallet escapement; the lever; the pallet action; the safety action; the hairspring and its adjustment; hour and half-hour striking clock with count-wheel; hour and half-hour striking clock with rack and snail; quarter striking clocks; chime clocks; synchronous electric clocks.

LESSON 10—Clock repairing: Repairing teeth in mainwheel or barrel; replacing barrel hook; repairing worn pivots; straightening bent pivots; replacing worn or broken pivots, pivoting; closing worn pivot holes with punch; closing worn pivot holes with bushings; depthing of wheels, use of the depthing-tool; straightening teeth and topping escape-wheel; calculation of train for missing escape-wheel; calculation of train for missing train-wheel; calculation of dial train for missing wheels.

Section 3—Watch Repairing

LESSON 11—Watch repairing: An American 18 size, full-plate movement, with right-angle lever

escapement; an American 16 size, ¾ plate movement, with straight-line lever escapement; cleaning watch movements, hand and machine methods; selection and fitting of mainsprings; fitting a barrel hook; closing barrel holes with punch; bushing barrel holes, uprighting barrel; fitting barrel cover.

LESSON 12—Watch repairing: Calculation of watch trains, all beats; depthing of wheels; the safety pinion; straightening and polishing pivots; pivoting a pinion; pivoting a balance staff.

LESSON 13—Watch repairing: Closing worn pivot holes with punch; closing worn pivot holes with bushings; uprighting center wheel; uprighting fourth wheel; fitting cannon pinions and adjusting friction.

LESSON 14—Watch repairing: Fitting new pinion to wheel in train; fitting new wheel to pinion; fitting new escape-wheel to pinion; bushing escape-wheel and fitting to pinion; fitting hollow center-pinion, pin, and cannon pinion; fitting ready-made balance staff to 18 size watch; truing balance wheel in flat and round; fitting ready-made balance staff to 0 size watch, or smaller, and truing balance.

LESSON 15—Watch repairing: Fitting watch hands; repairing hour-wheel pipe; fitting crystals, glass and unbreakable; repairing dials; fitting winding arbors and crowns, American and Swiss; fitting a case lift-spring; fitting a case lock-spring; fitting a case joint-pin; repairing and cleaning cases; fitting regulator pins; repairing banking pins.

LESSON 16—Watch repairing. Escapement drawings: Drawing a diagram of a right-angled; ratchet-toothed; lever escapement, with circular pallets; drawing a straight-lined; club-toothed; lever escapement, with circular pallets; drawing same, with equidistant pallets; drawing same, with semi-equidistant pallets; drawing a diagram showing tooth and pallet action, with 3° lift on tooth; drawing same, with 4° lift on tooth (drawings are optional but should be made to thoroughly understand escapement design.)

LESSON 17—Watch repairing: The club-toothed lever escapement; angular motion of the lever; banking-to-drop; the drop-lock; the drop; the shake; the draw; the run of the fork; the slide of the pallets; the lift; guard pin safety test; roller pin safety test; horn and corner test (lever and roller-pin); the theoretically correct escapement; practical adjustments, setting up the escapement; selecting and setting a roller jewel; adjusting the angular motion of the lever; adjusting the guard pin, single and double roller; replacing the guard pin, single and double roller; adjusting and repairing Swiss dart guard; setting pallet stones, adjusting for drop-lock, drop, shake, and draw; adjusting banking pins (eccentric) for run of fork and slide of pallets;adjusting solid banking and stationary banking pins.

LESSON 18—Watch repairing: Making a collet; making a hairspring pin; colleting a hairspring; truing a hairspring in the flat; truing a hairspring with collet and in the round.

LESSON 19—Watch repairing: Selecting and vibrating a flat hairspring, calculating train for vibrations required; studding and adjusting spring on balance bridge, circulating outer coil between regulator pins and centering collet with jewel hole; putting hairspring and balance in watch and timing by adjusting length of hairspring at stud.

Lesson 20—Watch repairing: Selecting spring, vibrating, and forming overcoil on flat hairspring; adjusting spring on bridge; and timing by adjusting weight of balance; theory of the overcoil, inner coil, and pinning points of hairspring, to poise spring; Timing methods.

Lesson 21—Watch repairing: Making and fitting a 16 size balance staff, measurements from sample; Truing the balance wheel in the flat; truing the balance wheel in the round; poising the balance wheel.

LESSON 22—Watch repairing: Compensating the balance and hairspring for heat and cold; modern uncompensated balances and hairsprings; theory of the balance arc of motion; theory of isochronism; adjustments to five positions, errors and methods of correction; timing machines.

LESSON 23—Watch repairing: Verge escapement; cylinder escapement; fitting new pivots to cylinder; fitting new cylinder; adjusting depth of cylinder and escape-wheel.

LESSON 24—Watch repairing: Duplex escapement; chronometer escapement; stop watches or timers.

National Defense Watchmaker Registration

The news papers of America have been devoting lengthy front page editorials to this subject.

Every paper in every city has talked of our national defense connections and our value to American protection. This is as it should be, because watchmakers have, since the beginning of time, contributed heavily to our civilized world's comfort and progress.

Watchmakers and jewelers who haven't as yet registered should send for registration questionnaires at once.

The registration of your talents now may prove valuable to our country and industries, and will certainly be of value to you for it is better to serve in the lines we are best fitted (should the occasion arise), than to shoulder a gun and have our mechanized forces suffer for want of experienced mechanical men.

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Sandsteel-Crosscurved Mainsprings
To be had in all sizes of American and Swiss
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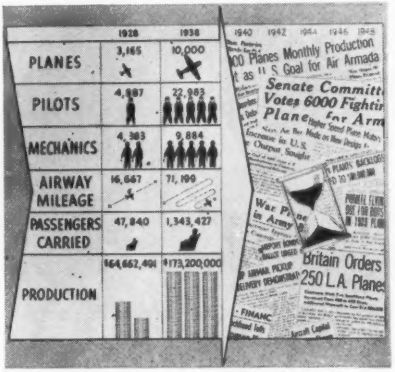
Aeronautical Instrument Course

To those who have been following the Aeronautical Instrument Service articles, or who are students of group guild classes, and have requested additional literature on this fascinating subject, we are now in a position to supply you with an individual or group study course which is supplied complete at one time.



Twelve years ago you could have been on the ground floor, but this industry is st'll in its infancy and eagerly absorbing all types of men capable of adapting themselves to the various tasks. William Henry Widiger, age 69, 54 years at the

This course has twelve illustrations including questionnaires. The price postpaid is $2.50 with order. There are no charge accounts on this course.

Lady Watchmakers, Attention!

Lady horologists, whether members of U.H.A. of A. or not, many requests have been made for the establishment of a ladies guild affiliated with the U. H. A. A.

This guild to be established in accordance to the constitution and by-laws of the National Association, but to be composed entirely of lady watchmakers, practicing or having practiced in the Art and Science of Horology.

We shall greatly appreciate it if the ladies, now practicing, will write the National Organization in regards to themselves. Also members of the trade, knowing of lady watchmakers, if they will forward their names and addresses to us we shall make the contact and get this National ladies' guild established.

From information now on file there should be several dozen ladies available for this organization.

A novel plan is being formulated at the present time.

Incomparable
Watch Case Repairing
OUR WORK COSTS NO MORE THAN ORDINARY WORK
BECKER-HECKMAN CO.
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FULCRUM OIL
is the only Watch and Clock lubricant ever produced which is
ABSOLUTELY FREE FROM ACIDS
of all kinds. This is a broad statement BUT WE CAN PROVE IT. Acids mean blackened and corroded pivots,—it means in many instances having to do your work over again.
All Material Jobbers Sell Fulcrum Oil
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It *wouldn't work* FOR MAHOMET *either!*

YOU CAN'T get a mountain of profits by wishing . . . but it's common knowledge that you can make profits pile up if you go about it the right way. And about the rightest way we know is to corner the watch profits in your community. How? It's easy—just push Gruen watches . . . and push 'em with Gruen's famous pre-tested sales helps! Radio programs, hard hitting ads, mailing pieces—you'll find just the thing you need to do the job you want to do! And right now—during the June selling season—is the time to start. So get going—and get more than your share of the gravy! The Gruen Watch Company, Time Hill, Cincinnati, O., U. S. A. In Canada, Toronto, Ont.

Aggressive advertisements in national magazines read by your customers.

Your own "custom-built" newspaper advertisements to be used in your local papers.

Colorful displays for your windows and attractive signs for your store.

Direct mailpieces for your customers—your own radio shows for your local stations.

GRUEN

THE PRECISION WATCH

★

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GIFTS FROM YOUR JEWELER ARE GIFTS AT THEIR BEST

Watches of Switzerland Featured at the New York World's Fair

Again this year the exhibition of the Swiss Watch Manufacturers is a high spot at the Pavilion of Switzerland, so popular at the New York World's Fair. Over five hundred watches and about fifty clocks are on display, an impressive picture of the amazing versatility of purpose and style of the modern Swiss watches.

The exhibit was organized in Switzerland by the Office for the Expansion of Trade co-operating with the Swiss Chamber of Watchmaking under the auspices of the Swiss Federal Government. They entrusted the layout and management to Jean Louis Roehrich of New York, graduate of the Horological School of Geneva and also President of the New York State Watchmakers' Association and Vice President of the Horological Institute of America.

The display is larger this year, as seven additional firms are participating: Gubelin, Movado, Tavannes, Concord, Jules Jurgensen, Nicolet and Langendorf, making a total of twenty-five different manufacturers represented.

The feminine element is drawn as by a magnet to the center of this exhibit, the "Jewelry Watches," with a dazzling gold and baguette diamonds feather-clip watch by Gubelin; a water-lily clip watch of gold and rubies and a ring watch of platinum and square-cut diamonds with cover over the dial by Patek Philippe; solid bracelets of gold with rubies or diamonds by Ulysse Nardin, Movado and Concord; also dainty, rich cord watches of diamonds and rubies by Universal, Girard-Perregaux and Buren.

On either side of this center window, each in its special showcase, are the novelty watches, the waterproof watches, the watches of high accuracy and the stopwatches.

The novelty watches illustrate the multiple uses in connection with personal jewelry of small Swiss watches, characteristic of the ability of Swiss designers to keep up with the ever-changing demands of fashion. Pendants, ring watches and unusual metal bracelet watches by Invicta-Seeland; a gold golf watch by Mido as well as a unique waterproof diamond ring watch; a self-winding purse watch by Eterna; interesting fob watches by Nicolet and Wyler are shown, as well as a fountain pen watch by Glycine. An achievement by Movado is a reversible gold wrist watch with time on one side and a calendar on the other.

Men, of course, young or old, are attracted by the waterproof watches and the stopwatches. Every modern type of waterproof, shock-resisting, non-magnetic, and in some cases self-winding wrist watches is shown in this group. Some of the waterproof watches are remarkably thin, for example the Mocado and Eterna models, or very small or even jeweled outside, like the complete selection of Mido. Eterna, Glycine, Mido and Wyler show the self-winding models. Tavannes have interesting rectangular waterproof models in gold; while Cortebert, Meyer Studeli and Langendorf also have waterproof models in steel of the same shape. In spite of their more utilitarian purposes, these waterproof models are also graceful and the latest ones show a clever combination of the serviceable with the good looking.

Chronographs for the wrist or the pocket in all colors of solid gold

cases or in stainless steel, often with watertight cases, and split-second pocket watches, are displayed together, in the special window for stopwatches. The steel waterproof stopwatches are by Universal, Eterna, Mocado and Mido. The stop wristwatch by Patek Philippe; others by Ulysse Nardin, who are also showing two thin split-second and chronograph pocket watches; two unusual models by Audemars-Piguet and Universal, all of them in 18-karat gold, as well as a striking model in redgold with white hands by Omega, make this collection of stopwatches of unequalled interest to visitors.

The finest specimen of gentlemen's watches with thin or complicated movements are represented in the showcase for high accuracy watches, where the names of Patek Philippe, Ulysse Nardin, Audemars and Piguet, Vacheron Constantin, Le Coultre and Jules Jurgensen compose the artistocracy of quality in Swiss

Watchmaking. A gold tourbillon escapement pocket watch, with first prize from the Geneva Observatory, made by Patek Philippe, offers a special treat to every horologist, as he alone really understands what efforts and skill go into the execution of a masterpiece of this kind.

The same remark applies to the five "record" watches separately displayed under the glass in the center of the hall.

The most complicated watch by Patek Philippe even goes the tourbillon one better, although it only has an anchor escapement, but it is a minute repeater, split-second chronograph, perpetual calendar with moon phases, and shows sidereal time, time of sunrise and sunset, the constellations and is also a clock watch.

Next to it is the most accurate watch ever tested at the English Observatory of Kew Teddington, where it obtained 97.8, 100 being the unattainable perfection. This movement was made by Omega.

The thinnest watch is displayed next to a silver dollar, which appears much thicker in contrast; this watch comes from the exclusive shop of Audemars & Piguet; while the smallest watch, by Le Coultre, is so minute that visitors sometimes must be shown just the spot where it is inserted in a transparent glass support.

These achievements of horological skill are of such high character that it is difficult to conceive that the ingenuity of future generations of Swiss craftsmen can ever surpass them.

And yet the same thought may well have occurred to the contemporaries of those who made the masterpieces of former days, shown in the case of antique watches loaned by the Geneva Museum. The oldest model contains the latest improvements of the year 1570, namely, the long obsolete stack-fried and the verge escapements with the serviceable fusee which kept sway for such a long time, until the cylinder escape-

ment revolutionized the appearance of watches in the early nineteenth century. Here the main steps of the advancement of chronometry are well illustrated.

In the modern watches, the variety of design and flawless execution rouse admiring comments from visitors. They are interested, too, in popular-priced watches, which are well represented by the firms of Meyer Studeli, Schlup and Langendorf, whose movements, named respectively Roamer, Rado and Lonville, are well known and appreciated in this country.

The clocks in this exhibit are in a special glass case on the back wall of the hall; they are of new and unusual designs, for the desk or boudoir, the traveler or the mariner. Of special interest are various models of marine chronometers by Ulysse Nardin, the masters in this field. For modern appearance and style, the new Arthur Imhof models are outstanding, and the International Time clock by Concord is of special interest. The smart traveling clocks by Le Coultre also deserve mention.

Aside from these watch and clock displays themselves, the horologists will delight in the inspection of seventy-five watch movements, including every possible size and shape of the calibers manufactured today.

The Atmos clock by Le Coultre with the enlarged working escapement by Eterna and Jules Jurgensen, or the enlarged twelve-hour totalizer, double action stop watch by Universal, are all of fascinating interest both for laymen or horologists. Enlarged movements by Girard-Perregaux, Roamer and Schlup, not only display faultless workmanship and exquisite finish, but give the visitors an understanding of the intricacies of the watch movement.

Through lighted apertures in the

Elgin and Waltham

SLEEVES — STEMS AND SLEEVES
for
BRACELET AND POCKET WATCHES

This assortment put up in the 72-bottle Tu-Tone wood cabinet contains 26 Elgin and 28 Waltham sleeves, and 7 Elgin and 5 Waltham stems and sleeves. To fill the cabinet, 6 of the most popular P. S. stems are added.

No. 379, each, $8.50

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black glass panel running the whole length of the back wall can be seen demonstrators, electrically operated, which give concrete examples of the hardships which waterproof watches can endure with impunity. The Mido Multifort, for example, is first held before a magnet, then dropped with a bang on a metal plate before taking a cooling dip in a water-filled container. There is also a moving hand holding a watch indicating the self-winding feature of the Mido watch. The Glycine self-winding also undergoes the same ordeal without harm, as it falls on a miniature anvil, and there are two toy submarines carrying watches, slowly revolving under water.

Then there are the historic timepieces worn by such prominent people as Pope Pius IX, Tzar Nicholas II, Mr. J. W. Packard, and Commander Ellsworth, all from the Patek Philippe collection; and there is one worn by the late Marshall Balbo in the Omega collection, thus adding a note of human interest to the exhibit which well repays the visit of laymen and horologist alike.

Turtle Clock

By George T. Gruen

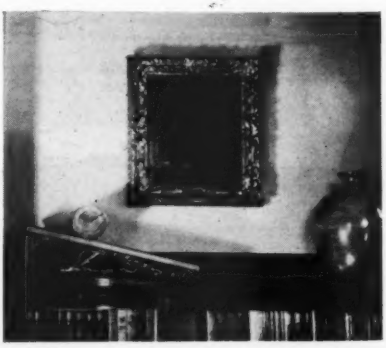
This clock was designed by Mr. Nicholas Grollier de Serviére, who was born at Lyons, France, in 1593, and died in 1686. Mr. Grollier de Serviére passed his early manhood in the service of the French army. In later years, maybe after having retired from his army position, he took designing to become his hobby, and he invented and sketched all sorts of very interesting pieces of mechanism. As far as we know, Mr. Grollier de Serviére made a number of inventions and suggestions for the use of firearms for the artillery, etc. He also designed several types of clocks, among them, as said above, he first conceived the idea of a turtle, swimming in a plate filled with water, and pointing to the time. Whether a clock of this description, in his time, was ever put to practical use, or not, I don't know. At any rate, there does not seem to be an example of it left to posterity.

The mechanism is rather simple. The clockworks are inside the body of the clock, the movement is placed horizontally, and the turtle, swimming in a shallow plate, is controlled by a magnet which revolves once in 12 hours. The turtle is underneath of cork, with a little steel-plate inside the body; it works in correspondence with the magnet. On the side-rim of the plate are marked the 12 numerals (hours).

"Rolling Clock"

By George T. Gruen

This type of clock was designed by Mr. Grollier de Serviére, though it cannot be learned whether or not he was the inventor, because a patent was granted in 1661 to the Marquis of Worcester. In 1684 another inventor was named — Maurice Wheeler—who claimed that it was his invention.



This clock bases on the law of gravity. The clocks made at that time were one-day timepieces, with one hour-hand only. Again it was the search for "novelties" among the antiques that induced the manufacturer to copy, more or less, clocks

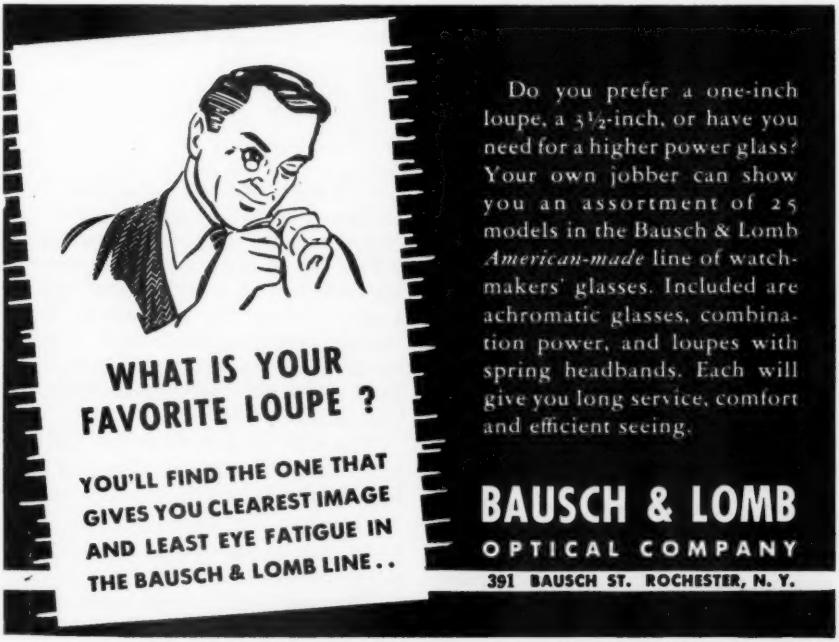
that were made several hundred years ago. He improved them considerably. They are now running 8 days and the movement running down the incline shows, while running, the days of the week.

Mr. Nicholas Grollier de Serviére was born at Lyons, France, in 1593 and died in 1686. He passed his early manhood in the service of the French army. In later years, maybe after having retired from his army position, he took designing to become his hobby, and he invented and sketched all sorts of very interesting pieces of mechanism. As far as can be learned he made a number of inventions and suggestions for use of fire arms for the artillery, etc. He also designed several types of clocks.

Your Responsibility

By S. P. Dayton

You were brought into this world without your knowledge or consent and you are forced through by a set of natural laws which you had no part in making and which except for an occasional eruption operate perfectly. Likewise you must accept a set of man made laws under the same conditions, unless you decide to go way off and live in the jungles. When this all dawns upon you then you ask one of the world's greatest questions. What am I responsible for? Laying aside the spiritual angle one of the greatest natural laws upon which everyone must make hundreds of decisions is that law of right and wrong. When you accept a position as a horologist or open a business of your own you unconsciously accept an obligation to uphold the ideals of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your trade and if you fail you have then and there broken the law of right. Those ideals are broad and cover a wide area such as good workmanship, common honesty, the upholding of living prices, sociability without partisianship and the support of organizations for the betterment and prosperity of that business.

Right at this point another natural law enters the picture. Various forces are at work to tear down our morals, destroy profits, cheapen the price of our labor and make it harder for us to meet financial obligations and even to seriously threaten our ability to make a living out of a trade into which we have put our hopes our ideals and the best years of life. An old sage has said, it is not all of life to live and just simply going back and forth to work each day without giving any thought to the people who work night and day to chisel into our meager earnings is not enough. One of the things that has hurt us is the published stories under the caption of wealthy jeweler, a statement that is all too often misapplied. In this age of increasing expenses our tax gatherers are looking for new sources of wealth to tax and these stories cause them to consider more taxes for us and make it necessary that we should put up a bold and united front in both state and nation to show the tax authorities that we are not the people of wealth that newspapers would lead them to believe and that we have hard enough time to keep the wolf from the door and cause them to look for other sources to carry this burden who are more able to do it than we are.

It is a matter of horological history that many times in the past our national organizations have been able to prove the above to our political leaders and make a successful fight to stop another and another 10 per cent increase in taxes on our industry. If we had not realized our moral obligations and left these taxes pile up they would long ere this have put many of us in such dire financial straits as to seriously threaten our ability to live and raise our families and lead the normal lives that you and I believe we are entitled to. Are you helping to fight this battle against the many angles of business destruction? Don't you consider it one of the moral obligations you incurred when you decided to go and stay civilized. The organizations your friendly and thoughtful fellow horologists have set up all over the country need your help in whatever small way you can do it and the big thing we need is your name on the roll of our guilds to add numerical strength in the legislative battles now being waged throughout the nation. The cost is surprisingly small, the good fellowship is a tremendous factor in making you feel you are doing the right thing to help you and to help us to better our condition and meet these forces that have done so much on the downward side. Write the national secretary, find out all about it at no cost or obligation. Get in with us, feel the thrill, the joy and satisfaction of cooperating with your fellow horologists and learn anew that it is not all of life to live.

Watchmaker's Legislation

The season is again open for Watchmakers' Legislation, and many states shall attempt to reach this cherished goal. How many will actually realize the attainment is, of course, problematical and depends upon their determination, finances, leadership, membership, backing, and cooperation.

The men who assume the working leadership of this momentous task may be the most efficient and capable in the state, but, without membership and financial backing your leaders are defeated before they start.

The states who have failed before can succeed now if their experiences

are not forgotten and if they are a American forefathers, determination, body of men endowed with our and convictions of knowing they are right and building for generations to come.

Watchmakers of the past and present have made America what it is, and that is no idle statement. If history is correct, and we know it is, then we have a traditional responsibility to maintain, and you are expected to do your part.

This traditional heritage of watchmakers will soon be bared to the entire world, through the daily papers of this land, and we shall face not only ourselves but the world as well and be expected to attempt and accomplish things within and without our confined fields of endeavor.

Plan now for action; don't allow a few inactive pessimistic men deprive you of your rights. Awaken your guild and state; contact your National Association, and get going.

We Should Be Proud

As Horologists we should be proud of ourselves and profession, but how can we be proud when our industry and profession is infested with an element who have never attained proper knowledge of the Horological Art. With all the facilities available to become proficient, we are confronted daily with cases of willful and ignorant destruction of watches and their parts.

Some of the industry feel Legislation for Watchmakers Registration will curtail their business practices in some way or another, or some feel the watchmakers will demand greater wages, etc.

All of such thoughts are only fear or laziness. Fear that they will have to conduct their business insofar as watch repairing is concerned along ethical lines, or laziness in taking part in the work to put this type of protection over as it should be. I feel this way: If there is something going to take place which is inevitable, then I want to be there and protect my best interest and see that it is a protective measure to those it will concern and myself. We cannot afford to continue in business these days and not expect some rules to goven; not us, perhaps, who are ethical so much, but those who are unethical.

Laws are not made to govern the law abiding, but those who would destroy those law-abiding concerns, and for that reason it is felt that all those who are law abiding will assist and become identified with those who are attempting to enact Watchmakers Registration Laws, and those who are not identified will automatically be recognized for the type of men or concerns they are.

Architects Use Platinum Leaf For Building Decoration

The first application of platinum leaf for building decoration was completed this week on the outer vestibule ceiling of the 67 Wall Street Building, in New York City.

Platinum leaf—latest product of the ancient art of gold beating—is beaten down to a thickness which requires a stack of 250,000 leaves to measure an inch in height. Yet, when applied to a surface, the leaf provides a metallic effect with all the rich color and beauty of platinum.

Cross and Cross, architects, selected the metallic leaf for the entrance because of its brightness, tarnish resistance and freedom from discoloration by atmospheric conditions.

Platinum leaf has been available for several years for outdoor signs, interior decoration, bookbinding and a wealth of other decorative uses where its lustrous color is desired.

Its initial use in art was on the statue, "Dawn of Tomorrow," sculptured by Mrs. Harry Payne Whitney for the New York World's Fair.

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Correct Stem in a Jiffy with Stem Assortment!

Just compare the setting bridge on the movement with the illustration on the chart. Each illustration shows the model and size of movement and bottle number for stem.

Sample illustrations of chart showing Name, Size, Series, and Model, together with identifying set bridge arrangement.

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AERONAUTICAL INSTRUMENT SERVICE

Aircraft Instruments

EDITOR'S NOTE—Aeronautical Instrument Service is a subject untouched by publications in the Horological field, or in fact by any publication. In September, 1938, THE AMERICAN HOROLOGIST inaugurated such an educational service via prepared illustrated lectures to be used by U. H. A. A. organizations for the purpose of broadening our members' scope of knowledge in this field, which offered additional remuneration to those far-sighted enough to avail themselves of such knowledge.

ARTICLE No. 12

(Continued from August Issue)

Repair and calibration of air-speed indicators—The air-speed indicator may be calibrated by placing the pressure tube, either Venturi-Pitot or Pitot-static, in a wind tunnel, connecting it with the indicator, and comparing the readings with the air speed of the tunnel as given by a standard laboratory Pitot. Apparatus for such a test is not available and is not needed at most airdromes as all pressure tubes have been tested before being accepted and distributed to supply depots. Their accuracy will not change unless they are damaged or unless the openings are clogged with dust, water, oil, etc. So, if the pressure tubes are kept clean and in good condition, it is not necessary to calibrate them. The air-speed indicators are not so durable, and it is advisable to check them occasionally. This may be done in either of two ways: By connecting the suction or static tube in parallel with the corresponding tube of a standard indicator (the errors of which are known) and applying suction corresponding to the various air speeds for which calibration is desired to the two instruments; or by connecting the suction tube to a water manometer and comparing the indicator readings with the manometer. In either method, the pressure tubes and pressure might be used in place of suction. But the latter is easier to manipulate, and with it there is less chance of letting moisture into the indicators.

Repair and Calibration of Air-Speed Indicators

Apparatus — Figure 38 shows the apparatus to be used with the second method. The curve of Figures 39 and Hable V shows the relation between the air speed and pressure. Both Figure 39 and Table V are based on equation (5), $V=17.88\sqrt{h}$, where V is the air speed in miles per hour and h is the differential pressure in inches of water. If the values of V are plotted against h on ordinary coordinate paper, the curve is a parabola. By using double logarithmic paper, a straight line is obtained, which is more convenient. The following table shows the differential pressure for the Venturi-Pitot air-speed tubes and indicators:

Table V—Venturi-Pitot Table.

V (air speed in miles per hour)	h (inches of water)	V (air speed in miles per hour)	h (inches of water)
0	0.	100	31.24
30	2.81	110	37.80
40	5.00	120	45.00
50	7.81	130	52.80
60	11.24	140	61.20
70	15.30	150	70.27
80	20.00	160	80.00
90	25.30		

It is apparent from the table that the manometer must be over 80 inches in height in order to calibrate an instrument over the full range of the scale, 0 to 160 miles per hour. The manometer should be of one-half inch outside diameter glass tubing. For connections to the pump, indicator, etc., metal or rubber tubing may be used. The vacuum chamber makes possible the application of a uniform suction. The pump may be either a hand vacuum pump or small

power pump as described for the testing apparatus of altimeters. There should be a stopcock between the pump and vacuum chamber. The stopcock between the vacuum chamber and manometer should be capable of a very fine adjustment in order that a very slow flow of air may be obtained. The manometer should be so filled with pure water that the level is a little more than 40 inches in each arm. The scale is graduated in inches with one-tenth-inch subdivisions.

(2) the same manometer can be used for calibrating Pitot indications but with reference to the following table, which is computed from equation (6), where $V=K\sqrt{h}$.

Table VI—Pitot Table.

Air speed (miles per hour)	Manometer (inches of water)	Air speed (miles per hour)	Manometer (inches of water)
30	0.444	200	20.03
40	.785	210	22.11
50	1.230	220	24.32
60	1.774	230	26.63
70	2.415	240	29.05
80	3.156	250	31.59
90	3.999	260	34.25
100	4.939	270	37.01
110	5.986	280	39.90
120	7.130	290	42.91
130	8.376	300	46.03
140	9.728	310	49.28
150	11.18	320	52.65
160	12.74	330	56.15
170	14.40	340	59.78
180	16.17	350	63.53
190	18.04		

Procedure — Since the manometer can be read with greater accuracy than the indicator, the better plan is to reduce the pressure in the manometer and indicator until the pointer stands exactly at some division mark on the scale, and then read the manometer. Since the indicator is seldom used below 40 miles per hour, the first reading may be made at this point. Below is given the procedure to be followed.

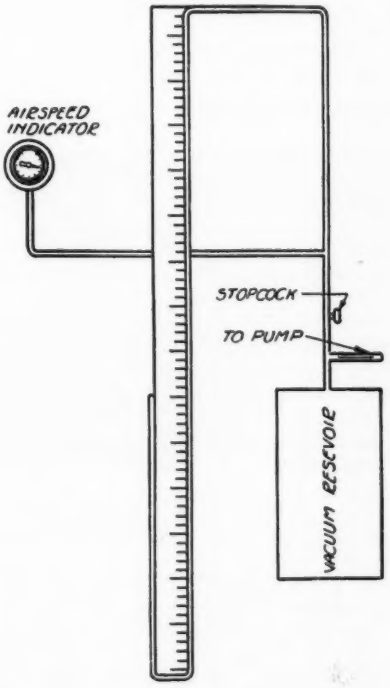
After the indicator is connected to the manometer, test for leaks. Accurate calibrations depend on good connections.

Reduce the pressure until the indicator reads 40 miles per hour. Read both arms of the manometer; then the indicator.

Repeat the process every 20 miles per hour throughout the range of the indicator.

Let the air into the apparatus and, in the same manner as described above, taking a reading every 20 miles per hour down the scale.

If it is desired to obtain the corrections for immediate points, the readings may be plotted on double logarithmic paper. First, draw the ideal curve, which is a straight line,



through the points 40 miles per hour, 5 inches; 80 miles per hour, 20 inches; 120 miles per hour, 45 inches; and 160 miles per hour, 80 inches. Then plot the indicator readings as abscissas and the presures from the manometer as ordinates for going up and coming down the scale. Connect the consecutive points with straight lines, which can be distinguished from the ideal curve. To find the error at any

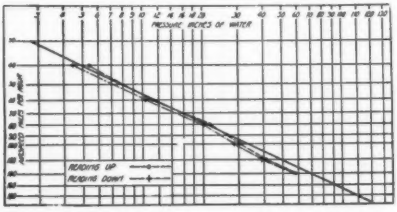
point, take the difference between the value of the abscissa on the ideal curve and the abscissa of the point on the calibration curve having the same ordinate. If the calibration curve is on the left of the ideal, the error is negative; if on the right positive. Taking Figure 39 as an example, the indicator at 50 miles per hour reads too low (negative error) by 0.8 miles per hour on the up calibration and too high (positive error) by 2 miles per hour on the down calibration.

Observe that the down curve is on the right of the up curve. This is generally the case and is caused by the lag. The difference in abscissa between points on the two curves having the same ordinate is the lag.

Since an indicator, when in use, is subjected continually to increasing and decreasing pressures, both calibrations are necessary, and the averages of the up and down readings may be taken as the values from which the errors are computed.

A table of errors, or corrections, may be posted on the instrument board beside the instrument.

Errors in air-speed indicators—The maximum error of an air-speed indicator should not exceed 1 per cent of the range of the instruments at any point on the scale. This allows



an error of 1.5 miles per hour each to the pressure tube and the indicator, which is the limit of tolerance in the Air Corps specifications. Some instruments have errors greatly in excess of this and have caused an unfavorable opinion among aviators of air-speed indicators in general. Next to actual calibration errors of the pressure tube and the indicator, the most common cause of incorrect readings is leaky connections. Errors may also be caused by mechanical defects, the most serious being excessive friction. This has so far been caused principally by the corrosion of steel pivots due to either the corrosive action of the acid in the soldering flux or to moisture, which is always present in an instrument. It has been found that through some defect, either in alignment or stamping, the teeth of the regment and pinion of some instruments do not mesh properly, causing the pointer to move irregularly.

Installation of air-speed indicators.—Be sure that a Pitot tube is used with a Pitot air-speed indicator and a Venturi tube with a Venturi-Pitot indicator.

Location — The approved location of the pressure tubes varies somewhat for different types of airplanes, but in general it should be on the inside of the extreme outside wing strut, two-thirds of the way up. The pressure tubes should never be mounted with the tubes supporting the Pitot or Venturi sloping upward, but always downward and outward. This precaution is necessary to prevent water from collecting in the connecting tubing when flying in clouds or rain.

Connections—All metal union connections are recommended for all joints in place of rubber tubing due to the deterioration of the latter. The metal fittings should be used for joining the connecting tubing to the indicators and the air-speed tubes, and for joining sections of the connecting tubing.

Tubing—The tubing leading from the Venturi and Pitot to the air-speed indicator are generally built in the wings. If not, the best location for them is along the under surface of the upper wing just under the rear spar. At this place, the projection

above the wing covering will least affect the flow of air. From the wing to the pressure tube, the tubing should be fastened along the front edge of the strut. Two or even three indicators may be operated from the same Venturi-Pitot. In this case, it is necessary to attach two tubes to each pressure and suction lead by a Y or T joint in order that the pressure nipple of each indicator may be connected with the Pitot, and the suction nipple of each to the Venturi. The entire installation from the pressure tube to the air-speed indicator must be air-tight for accurate air-speed indications. The air-tightness may be tested by blowing gently on the Pitot and sicking on the Venturi. Care should be taken to see that the Pitot and Venturi are connected to their respective nipples at the indicator. If these connections are reversed, the pointer will move in the wrong driection, and the instrument will be ruined.

(Continued next issue)

National Museum Collection

At the request of one of the members of the Museum Committee it has been decided to bend every possible effort towards the collection of uncased American watches, and to endeavor to complete a complete collection of American watches since the inception and manufacture of same in the United States.

This collection to be secured through donations by our members and readers. There is quite a number already of foreign made watches as well as American watches in our collection. The complete cataloging of this collection has not as yet been finished.

Those who wish to contribute may forward pieces that they may wish to donate to the National office, Denver, Colorado. Due credit and classification will be issued to each and every contributor.

Another Time Problem Solved

Archie Baxter (right) explains his new "FLYING TIME" Alarm Clock to a student, who is renting one of the light planes the former operates at F. B. Field. Four control knobs mark off fifteen-minute intervals of the hour—before a student takes off. Baxter presses down appropriate knob in accordance with amount of time that has been paid for. When the time is up, the alarm goes off, notifying pilot that he must come down. This new device "saves" Baxter two hours of flying time on a busy day.

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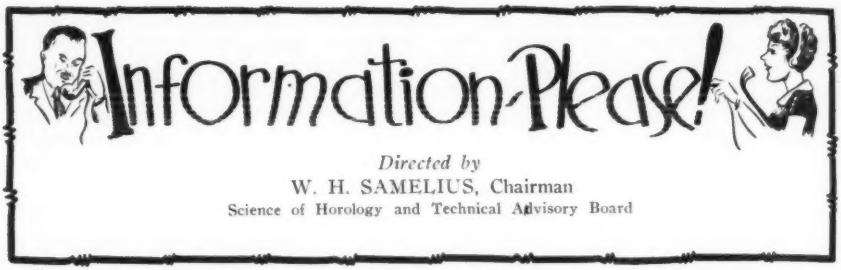

Directed by
W. H. SAMELIUS, Chairman
Science of Horology and Technical Advisory Board

J.H.T.—Should the escapement of a marine chronometer or pocket chronometer be oiled?

Answer—Do not oil the teeth of the escape wheel, the locking jewel, gold spring or rollet pallet of a detent escapement. Oiling causes them to stick and change the rate when the oil becomes old and gummy.

H.R.—Why do watchmakers use a piece of plate glass to work on?

Answer—The glass is easily cleaned and clean paper under it will usually give plenty of light to see to pick up small articles. If they worked on paper, they would be obliged to clean the pivots from small particles of lint and dust every time they put a watch together. The best plate is much stronger than the common double strength glass and will be less liable to get broken.

W.H.L.—How close should the cap jewel come to the hole jewel in a 21-jewel watch?

Answer—Just close enough to insure holding the oil in position between the cap and hole jewels. About .02MM.

S.T.M.—What is the side shake or freedom for the mainspring in a watch barrel?

Answer—For a barrel with flat cover, .10MM less than the measured depth of the bezel from the bottom to the cover seat. If the bezel cover is recessed, the recess affords sufficient freedom and the spring may, therefore, be on the full measured depth of the barrel. You will have no difficulty if you use only genuine material and see that you get the spring made by the factory for the particular movement. Material catalogs will give you this information.

O.N.O.—Will you kindly state if there is such a thing as a "bascule escapement"?

Answer—Bascule is another word for the pivoted detent escapement. In other words, the form of chronometer escapement in which the detent is pivoted in the center instead of being carried by a thin spring at its outer end. The bascule is usually the form of escapement used in pocket chronometer watches.

T.T.C.—I have two clocks about 30 years old which I have cleaned. The time is all right, but the strike side is off somewhere, as part of the time it strikes too much and at other times, not enough.

Answer—Examine the locking cam. If the corners are worn so as to be rounded, the corners should be spread a little with a hammer and then filed sharp; also, the edges of the cam should be very smooth and the locking hook should also be smooth. In some cases, the count hook is not deep enough or is bent to the wrong angle. It should enter and leave on a radial line from the center of the count wheel.

D.W.S.—I am a graduate of a watchmakers school, but do not feel I know it all, as my public school days were few. I had to go to work at 15. Can you tell me of some general lines along which I can read nights, as we have a fine public li-

brary?

Answer—We quote the advise of Ferdinand Berthoud, the celebrated French watchmaker, who said:

"To become a good watchmaker it is necessary to become a good arithmetician, in order to find out accurately the revolutions of each wheel; a geometrician, to determine correctly the curve of the teeth; a mechanician, to find precisely the force that must be applied; and an artist to be able to put into execution the principles and rules which the sciences prescribe. He must know how fluids resist bodies in motion and be well acquainted with the effects of heat and cold in different metals; in addition to these requirements, he must be endowed by nature with a happy genius to apply them all in the construction of an accurate measurer of time."

To this we can add: Do not expect to become learned in a year or two, take your mental food as you do your meals—a little every day; and do not study at one time more than you can absorb. You cannot eat enough at Thanksgiving to last you until Christmas and you cannot study that way either. Finally, remember that mental labor uses as much energy as working at the bench, so do not tax your energy in an attempt to hasten matters. A safe rule is to quit when your interest flags, or when you find it hard to get up in the morning. Remember, you are going to live for a long time and you can study for forty years.

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W. H. Samelius in Indiana at State Convention

By W. H. Scheafer, President

"I introduce to you, Professor Samelius, of the Elgin Watchmakers college, an authority on the science of watchmaking. Professor Samelius has ever been ready and willing to appear at our meetings and give lectures on watchmaking. His lectures are usually accompanied by illustrations and diagrams which are intelligent to all watchmakers. It does not matter who or where you may be, Professor Samelius will come at your bidding and do his part. He has endeared himself to the watchmakers of Indiana and I am sure that many other states feel the same way, for I have personally heard him in Ohio, Illinois, Pennsylvania and other states.

"I believe that Professor Samelius has done more for the uplift and education of watchmakers than any other one man in this country."

400-Day Clock Trouble

(From our Technical Question File.) The following question comes from Mr. L. J. G. and the reply is from Mr. J. E. Coleman of the National Technical Board.

Mr. L. J. G. replaced a suspension spring in a 400-day clock and was unable to time it. Mr. Coleman's remarks are as follows:

"From your letter the suspension spring you now have upon it is much too strong—as you say it gains one hour in three. I fear that it is too strong to even hone down and use. It will be better to obtain a weaker spring.

"Fitting a new suspension spring to a 400-day is exactly like placing a new hair-spring on a watch—the determining of the proper strength is far too close a measurement for a mike, therefore, it must be vibrated. Obtain a spring as near the old spring

as is possible in width and thickness, set your regulating weights in the center of their scope, place the spring properly in their chocks; letting the pendulum swing as close to the base of the clock as possible and practical, and leaving off the crotch fork. Now, proceed to "VIBRATE" as with watches, i.e., count its beats, your 400-day pendulum should beat eight (8) times per minute, you can readily see that if you count it through, say three minutes to 24 it will be more accurate than trying to count through single minutes. If the new spring is found to be too slow, the only way to speed it up is to shorten (raise the ball) it. If it is found to be too fast, it can be slowed down by honing the spring down with a fine oil stone. Do this by using a piece of plate glass to stretch it across, and make your strokes go as near its full length as possible. Once you have vibrated your spring as near to eight beats per minute as you can (with the regulating weights in center), you will find when you place the crotch fork on, and put the clock in operation it will time well within the scope of the regulator."

A reply from Mr. L.J.G. as follows: "I hated to make the inquiry in regard to the 400-day clock, but I knew I had the pendulum as low as possible and it still ran very fast. I've been working on clocks and watches for 15 years and after that time I did not like to admit that I was stumped. However, with the information you sent me it took me no time at all to hone down the spring and get the clock to time.

"I want to express my gratitude to you and U.H.A. for the prompt and courteous way in which you received and answered my letter, and for the information your answer contained. No doubt many clocks and watches would be better off if the repairman was not afraid to ask for help. At least in my case I know that hence-

DELIVERIES CAN BE MADE AT ONCE ON OUR 7-JEWEL GOLD-PLATED WATCHES

FOUR OF WHICH ARE SHOWN HERE

"DUCHESS"

Send for Circulars on the Full Line

"COUNTESS"

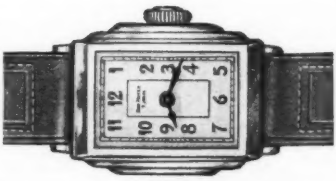
RETAIL

$5.95

TO

$7.50

"DUKE"



"COUNT"

Your Jobber Can Supply You

Watch Div., THE NEW HAVEN CLOCK COMPANY, NEW HAVEN, CONN.

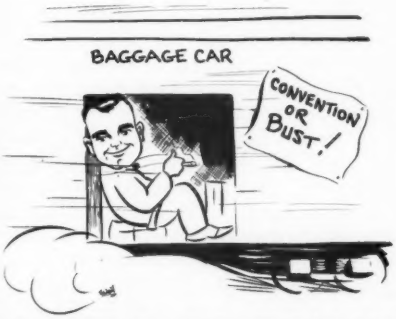
NEW HAVEN *Timepieces*

forth when in doubt I will not hesitiate to call on someone who does know.

"Again let me thank you for your kind cooperation in this instance."

Our Educators
(CUT)

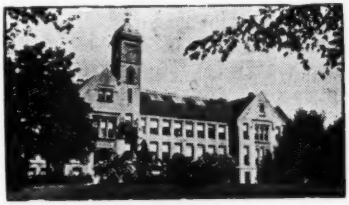
John J. Bowman, Bowman Technical School, as seen cartooned at recent Rotary Convention, Havana, Cuba. John likes to talk about home, and why not?



George Wild, Dean Bradley Horological School. George actually had to ride in the baggage car in order to attend Kansas State Convention, and was it hot? He is making plans now for the U. H. A. A. National Convention in Cool Air-Conditioned Duluth, Minn., June 22, 23, 24, 1941, and he wants a seat like all other Horologists in the Pullman.

Wm. H. Samelius, Dean Elgin Watchmakers' College. Billie goes to so many conventions and outings we didn't know just what his weakness was, but find on all picnics and vacations his love is running water and his fishing outfit. Just returned from Cape Cod, where, he says, "Fishing was marvelous; I caught all the law would allow; am burned to a crisp, and skinned by all hotels."

"The Pathway to Success"



WATCHWORK
JEWELRY
STONE SETTING
ENGRAVING

Bradley Polytechnic Institute School of Horology

DEPT. B PEORIA, ILL.

Established 1886

Early American Clock Dials

The duplication, repair or refinishing our specialty. Estimates cheerfully given.

J. E. COLEMAN

50 Arcade Bldg. Nashville, Tenn.

FRANK KAUFFMANN
1485 Third Ave., New York, N. Y.
IMPORTER
of world-famous hand-carved
CUCKOO CLOCKS
and Parts; also Movements for Grandfather Clocks
Ask for Latest Price List

An Analysis of Watch Repair Department

By E. SIEBEL

First we must come to a decision what the department is to be, a service or a commercial department or a combination of both. It should be the combination of the two.

I have been told the same as other watchmakers when going on a new job, that it was a service department and that we are not so concerned as to profits, but always there was the thought in mind you should double your salary.

I think we will agree on the proposition that it should be a combination of profit through service setup, and show a gain over cost the same as any other department in the store.

The location of repair department in a store is of importance. Some have it up front, others in the rear. Generally speaking the rear is better for a number of reasons. Principally in that putting it in the rear you create traffic through the length of your store, by making customers walk through the length of the store and unless he is blind they must see the goods which should be displayed in such an eye compelling manner as to attract attention.

Traffic is one thing which Jewelry Stores are crying for and which they have not seemed to be able to create by merchandising methods.

Now we come to another phase of the life of the department costs. We must know our costs if we are to know how or if we are making a profit.

The location of the department is a factor in controlling the overhead. If the department is located up front its proportionate share of rent is higher than the rear position. To get a true proportionate share is difficult sometimes.

If there is only one man in repair department the overhead will be proportionately heavier. If this lone watchmaker does selling also it makes a time proposition more difficult and heavier on repair department and is likely to be top heavy.

Now, the personnel of the department. It is a foregone conclusion, which is ignored in many stores, that the one who takes in the repairs should be one who knows something about repairs, and I mean knows, not thinks he knows. I have seen and heard work being taken in which I felt the customer must feel that the clerk did not know what he was talking about. One thing that a clerk must never do is to leave a doubt in a customer's mind, though he, the clerk, did not know what he was talking about. Another point is that repairs should be taken in by repair clerk and not by clerks in jewelry silver or diamond department clerks. If customer approaches these he should be escorted to repair clerk and introduced and the repair clerk's decision should be final.

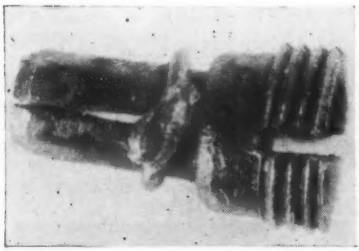
Now, when these factors are all gathered up—rent, heat, light in its proportionate share for department, to these add cost of material and supplies and the salaries (and let me say right here that by having cheap help you are boosting your overhead. I heard of one watchmaker who asked for more money being told that he did not do enough work to warrant a raise—his reply was, give me more money and I will do more work.)

When yo uhave these figures you know what it costs to do business, how much work you must do, how much you should charge for repairs. Now we can get an inkling why some repair departments do not pay. We can see also why $1.00 repairs are dishonest and a fraud.

It simply cannot be done, because the cost of business runs double or triple for the reasons set forth in the foregoing analysis.

Some Reasons for Legislation

A novel way to destroy a watch's appearance, when clique screwhead is broken off. Gouge the plate with graver until you are thoroughly disgusted, then saw across the plate to the improper depth to create a footing for screwdriver. Customers will be proud of the job and some watchmaker must have been on this one.



Watchcase sleeves have always been a problem to repair and we have for hundreds of years thought only replacement was the way out. But one of our Butcher brothers, who through some fiendish reason practices the fine art of horology in his unmechanical way, tells us to wrap the sleeve with binding wire and then soft solder. In a short time rust will start and we shall have little trouble with that thing known as friction.

THE MERCHANT WHO KNOWS NOTHING OF MECHANICS DOESN'T KNOW OR CARE ABOUT THESE UNETHICAL PRACTICES THAT CAUSE HIM, PERHAPS, TO LOSE CUSTOMERS. SO, TO PROTECT HIM AND OURSELVES, LET'S HAVE LEGISLATION TO FORCE OUR PROFESSION TO BE REGISTERED AND MORE EFFICIENT.

Colorado Watchmakers!!

Here is something you will want to see. An Automatic stem making machine.

Several Cleaning machines side by side, for your comparison.

Several jeweling tools side by side for your comparison

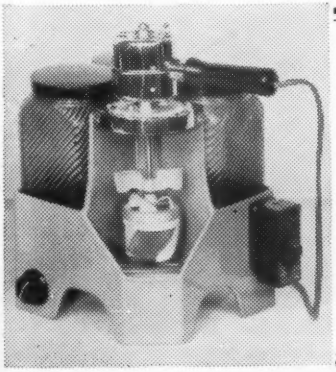
These machines will be on display and in operation not to mention many small tools, even some that have not

COSLEY JEWELRY COMPANY

Wholesale Dealers of

Jewelry, Tools and Jewelers' Supplies, Findings, etc.

301-302-303 University Building
Denver, Colorado



Superior Watch-Cleaning Machine

All the name implies

New Feature—

Automatic cut off on the drying unit

PRICE - $35.00

$3.50 per month for 10 months

Distributed by:

FISHER'S SUPPLY HOUSE **Roanoke, Va.**

Wholesale Jewelers Supplies

yet been offered to the trade.

In addition there will be a watch rate recorded operated by an expert. Bring a trouble watch for a complete diagnosis.

Do you ever have trouble with riveting staffs in solid balances so that the balance is true? If so our state Technical Dept. will demonstrate a way to eliminate this trouble.

You will see the newest watch models and many other things to fascinate the watchmaker and jeweler.

Would you like to take a trip through a modern instrument factory? **Just be at the convention.**

Where is it? Why, of course, the Convention of Master Watchmakers Association of Colorado. Sept. 29, 1940, 10:30 A. M. at the Shirley-Savoy Hotel in Denver. All Rocky Mountain region Watchmakers and Jewelers are invited.

D. BROWN
Convention Comm. Chairman.

BOWMAN Technical School
Courses for Success for WATCHMAKERS ENGRAVERS, JEWELERS
Write for free book "Your Future and Our School"
JOHN J. BOWMAN, Director
Bowman Bldg., Lancaster, Pa.

Truing a Balance

By J. H. BRYANS

My method of truing a balance is different than the usual method. Set the indicator as in sketch, at top edge of bevel, move balance back and forth, note where bend should be, correct and try again, when it is true all the way around, spin and note that it has that DEAD TRUE look as in a new balance, also you will find that PRACTICALLY ALL BALANCES will BE IN POISE, a result rarely found when trued ON OUTSIDE RIM.

Never STRETCH A BALANCE

There Is No Substitute for a Genuine Seitz' Friction Tool!

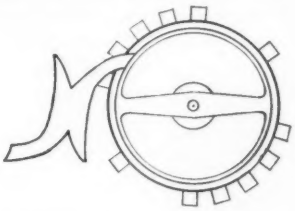
SEITZ' Friction Tool was the first on the market. Buy a SEITZ' Friction Tool and it will do its duty in ten years, as well as today. The illustration shows the simplicity and elegance of the new SEITZ' Friction Tool. It's of classical accuracy. Only SEITZ' outfits have bushers and anvils, special reamers and self-centering pump pushers.

A modern tool for a modern watchmaker!

Your Supplier Will Be Glad to Give You an Offer!

BERGEON & CO.
LE LOCLE, SWITZERLAND

ARM, grasp it by H. S. Collett end of staff in chuck, then TURN THE BALANCE ON the staff. A half to



three-quarters turn will correct all of them.

Central Kansas Guild

The boys of this Guild are fortunate and proud to have as their Technical Director William H. Widiger of McPherson. The members often make special trips to see Mr. Widiger on individual technical problems.

The accompanying picture was taken at a recent technical meeting unbeknown to Mr. Widiger, as he was instructing the members in the art of engraving and care of the tools.

William Henry Widiger, age 69, 54 years at the bench. Born June 25th, 1871. Technical Director of the Central Guild and State Association.

Duluth Master Watchmakers Association

Held its picnic during the month of August at the summer home of their member, J. Arnold Johnson, at Pike Lake.

A splendid time was had, the day being devoted to swimming, speedboat riding, horseshoe pitching, volleyball playing and EATING. A pleasant day was had by all who attended this successful picnic.

Herbert W. Schmidt, Secy.

New Elgin Movement

Announcement of a new movement for the famed "Lady Elgin" 19-jewel watch, quality model of the Elgin National Watch Company, was made this month in the presentation of the firm's 1941 series.

The movement provides greater adaptability for varied styling without sacrifice of the accuracy and precision features which are standard in this class of watch, the Elgin officials stated in making the announcement. Known as the "demi" movement, it permits the watch designer greater freedom in case styling and fashioning. As a result, some twenty models are now available in Lady Elgin plain styles ranging in price from $50 to $70 and twenty-four style combinations have been achieved in the diamond set varieties, which are sold from $65 to $450. The same improved possibilities are true of the custom built watches with the new movement, which come in prices up to $5,000.

Rhodium, four times as costly as platinum, protects the plates of the new Lady Elgin 19-jewel movement. The "drive" wheels are covered with 24k gold. The delicate watch mechanism has all of the finer exclusive precision developments such as the Elginium hairspring, Beryl-X balance and grooved balance staff which are now standard in all Elgin wrist watches.

The North Central Ohio Watchmakers Guild

Formerly "Mansfield Watchmakers Guild" changed its name and elected officers at their last meeting.

Meetings will be second Tuesday of each month.

Mr. J. W. Pitkin of Norwalk, President.

Mr. E. R. Swank, of Mansfield, Secretary-Treasurer.

Chicago Guild

Holds its annual dinner September 18th. All horologists, jewelers, and subscribers to THE AMERICAN HOROLOGIST are invited. Contact Carl Ander, 903 Belmont Avenue, Chicago, Illinois.

Allegheny County Guild No. 1

The Horological Association of Pennsylvania, Inc., held at Franklin Grove, North Side, Pittsburgh, Pennsylvania, was a huge success, with the attendance of 300 Horologists and their families and friends. A cash profit was shown on the picnic and raffle of a Westinghouse Roaster, complete with table, boiler and chinaware. Door prizes donated by the local wholesalers and retailers and prizes for each of twelve sports were distributed. The mushball game between the watchmakers and the Curry-Thompson printers team was won by the watchmakers by the score of 27 to 4.

Detroit Horological Society

The Detroit Guild held its second annual boat trip to Put-In-Bay and a good time was had by all.

These annual events are proving to be quite valuable, not only to Detroit, but to all guilds who actively prepare such outings in order to bring about a greater degree of fraternalism and cooperation.

Guild No. 1, Tennessee

Guild No. 1, Tennessee Watchmakers & Jewelers Association combined their annual election of officers and annual picnic with the regular monthly meeting for August—it was held at "Jackson Cabin" in Shelby Park, Nashville, Tuesday evening August 6th. The jovialty and general picnic activity of the crowd made an absolute count well nigh impossible and when an estimate was decided upon, it was found that the kiddies would have to be eliminated. From fifty-five to sixty grown ups enjoyed what everyone termed the best picnic ever. Barbecue was served by the Guild with wives and members of the Ladies Auxiliary bringing pickles, potato chips and all the other trimmings—the main feature of the picnic dinner being "corn-on-the-cob" boiled in a large pot over an open fire with every one taking a hand in its preparation.

Pres. Hooley

At 6:00 P. M. President John Varallo announced a business meeting of the Guild to be held inside the "cabin." Minutes of last meeting were read and approved and it was announced the only business that would be transacted was the annual election of officers. Mr. John L. Hooley was elected President, Mr. Kennedy from Gallatin, was elected Vice President, and Mr. Dee Osborne was re-elected Secretary-Treasurer. This is Mr. Osborne's third consecutive term. Mr. Hooley, popular watchmaker and manager of The Lee Jewelry Co., in the Arcade, has served Guild No. 1 as its President once before, having been elected to that place at the 1936 August election.

Dayton Guild

The regular monthly meeting was suspended during July and August due to some very hot weather.

We had our annual family picnic August 18, with the usual games, etc., which always proved so popular.

Our regular meetings will start again in September and plans are being made to have another bowling team in league competition again this winter.

Our state association has plenty of hard work ahead of its members for the coming few months. Plans for the renewal of our state licensing bill are being formed at the present time.

We wish more of the guilds in the various states would be more regular in reporting news and ideas to the National office, as we know that such news is of great value to us and all other units.

S. V. Geile, President.

An Original Sales Program

Out of the swelter of the summer's doldrum has emerged one of the most complete and elaborate sales merchandising programs of the past few years.

The Elgin National Watch Company this month completed arrangements for its fall and Christmas advertising program in anticipation of what looks like a record year for domestic watch sales. A preview of plans for the coming months discloses a vast and colorful appeal to American traditions and personages. No dreary, eloquent, "Fourth of July" speech campaign however, it leans more toward good, clean American "pun." The familiar figure of Santa Claus reviews a whole cast of well-known figures of history and literature from Paul Revere to Robinson Crusoe, with appropriate humorous cartoon presentations that tell Elgin's sales story in an original manner.

A preview of the campaign shows how Elgin intends to "rouse the country" in typical Paul Revere fashion for the Christmas buying. The watchword will be "quality" and will be carried to the people of the nation in a newspaper and magazine message reaching its climax in the November and December issues.

The entire program has been worked out in advance in every detail and is one of the most all-inclusive and well developed sales programs perfected in recent years. It covers the American business picture to its broadest extent and officers of the firm forecast an exceptionally favorable response for themselves and jewelery this year because of the emphasis on American industry and trade.

The Elgin Company has always laid great stress on its position as a United States institution and this is especially v a l u a b l e under current business conditions. For instance, ninety-six per cent of its employees are native born and all are U. S. citizens. Its raw materials are drawn almost exclusively from domestic sources and its personnel and production methods, combining precise artisanship with mass industrial output, are in keeping with the best American traditions that won this country's industry first place in the international economic picture. Fittingly enough, the forthcoming advertising campaign develops this theme at a time when it is most warranted.

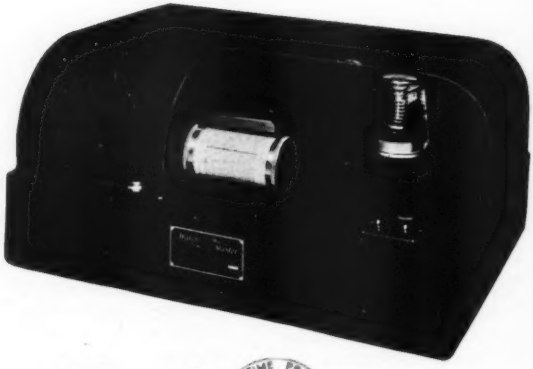
Coast To Coast Tour Watch-Motor Mainspring Co., Inc.

Mr. Sigfrid Strommer, Vice-President of Watch-Motor Mainspring Co., Inc., New York, started on September 3rd on a flying tour to call on their many customers from coast to coast. Mr. Strommer reports business very good with steady growth and a decided upturn this year.

LOSING MONEY

By not making it?

Why do some firms go forward while others stand still? Is it the failure of the backward to grasp opportunities that can be turned into money? Hundreds of jewelers say that the Watch-Master produces actual profit by reducing costs and increasing patronage. Why not write for the details?



This instrument gives you a printed chart record showing the 24-hour gain or loss in the rate of any watch and indicating the cause of irregularities—all in 30 seconds.

Watch Master

Watch-Rate Recorders

American Time Products, Inc.

580 Fifth Avenue • New York, N. Y.

Distributor of Western Electric Watch-rate Recorders